

Trial investigates use of invasive strategy to treat older patients after non-ST-elevation myocardial infarction

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Credit: Lynn Greyling/public domain

An invasive strategy vs. optimal medical therapy alone after a non-ST-elevation myocardial infarction (NSTEMI) in older adults did not affect the combined risk of cardiovascular death or MI, although non-fatal MIs and subsequent revascularization procedures were reduced, according to late-breaking research presented in a Hot Line session Sept. 1 at [ESC Congress 2024](#). The SENIOR-RITA trial is simultaneously [published](#) in the *New England Journal of Medicine*.

In higher-risk patients after NSTEMI, guidelines recommend an invasive strategy over medications alone. However, older patients with NSTEMI are less likely to receive guideline-recommended care including an invasive strategy. This might be due to clinician or patient fear of the risk of procedural complications or futility.

Furthermore, older patients are underrepresented in clinical trials of NSTEMI treatment strategies and robust evidence-based recommendations for their care are lacking. Therefore, the care of older adults with NSTEMI is not standardized.

Lead investigator, Professor Vijay Kunadian of the Translational and Clinical Research Institute, Newcastle University and Freeman Hospital, Newcastle-Upon-Tyne, U.K., explained, "Our hypothesis was that an invasive strategy on top of optimal medical therapy vs. a conservative strategy of optimal medical therapy alone would be superior in terms of reducing the combined risk of cardiovascular death or non-fatal MI in patients aged ≥ 75 years admitted with a NSTEMI.

"In a broad inclusive trial population, which represents the older patients we see in our daily clinical practice, we did not see a reduction in the combined risk of cardiovascular death or non-fatal MI, but we did see a reduction in recurrent non-fatal MIs and the need for subsequent revascularization procedures."

In the open-label SENIOR-RITA trial, patients aged ≥ 75 years presenting with type 1 NSTEMI were randomly allocated (1:1) to one of two treatment groups. In the conservative strategy group, patients received ESC Guideline-recommended secondary prevention therapy, including antiplatelet therapy, statins, angiotensin-converting enzyme inhibitors and beta-blockers.

In the invasive strategy group, in addition to these medications, patients had invasive coronary angiography and, if deemed necessary, coronary revascularization (insertion of a stent or bypass surgery). All patients had formal assessment of frailty, cognition and co-morbidity at baseline and follow-up.

The primary endpoint was time to cardiovascular death or non-fatal MI. Secondary endpoints included components of the primary endpoint, all-cause death, subsequent coronary revascularization and bleeding complications.

In total, 1,518 patients were recruited from around 48 NHS sites across England and Scotland. The mean overall age was 82.4 years and 72% were aged 80 years or older (the oldest being 103 years old). Almost half were female (45%).

Overall, 80% of patients were classified as prefrail or frail, more than 60% had [cognitive impairment](#) and the majority had a comorbidity index of ≥ 5 , indicating multiple concurrent long-term conditions.

Medical therapy was balanced between the two groups. In the invasive group, 90% had the intended angiography and 50% had revascularization procedures during hospitalization.

After median follow-up of 4.1 years, there was no difference in the primary endpoint of cardiovascular death or non-fatal MI between the

invasive strategy group (25.6%) and the conservative strategy group (26.3%; hazard ratio [HR] 0.94, 95% confidence interval [CI] 0.77–1.14; $p=0.53$). This pattern was observed for the different prespecified subgroups (including those who were frail, cognitively impaired or had multiple comorbidities).

No differences were observed for cardiovascular death (15.8% with invasive strategy vs. 14.2% with conservative strategy; HR 1.11; 95% CI 0.86–1.44). There was a significant reduction in non-fatal MI, which occurred in 11.7% of patients in the invasive strategy group vs. 15.0% in the conservative strategy group (HR 0.75; 95% CI 0.57–0.99).

Patients in the invasive strategy group also required fewer subsequent revascularization procedures than those in the conservative strategy group (3.9% vs. 13.7%; HR 0.26; 95% CI 0.17–0.39).

There were no observed differences in the other secondary outcomes, including all-cause death, all MIs combined, stroke, hospitalization for heart failure or any bleeding complications. The rate of procedural complications was less than 1%.

Professor Kunadian concluded, "An invasive strategy did not reduce the primary endpoint (combined risk of cardiovascular [death](#) or non-fatal MI), but we did see some benefits. Importantly, the invasive strategy appeared to be safe overall in our older patients.

"These results are consistent with our recent patient-level meta-analysis, which we are currently updating with data from SENIOR-RITA to further strengthen the evidence base in this understudied population. Including [older patients](#) in trials enables us to challenge current practice and highlights that age should not be a barrier to individualized care, including access to angiography and percutaneous coronary intervention."

More information: Vijay Kunadian et al, Invasive Treatment Strategy for Older Patients with Myocardial Infarction, *New England Journal of Medicine* (2024). [DOI: 10.1056/NEJMoa2407791](https://doi.org/10.1056/NEJMoa2407791)

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